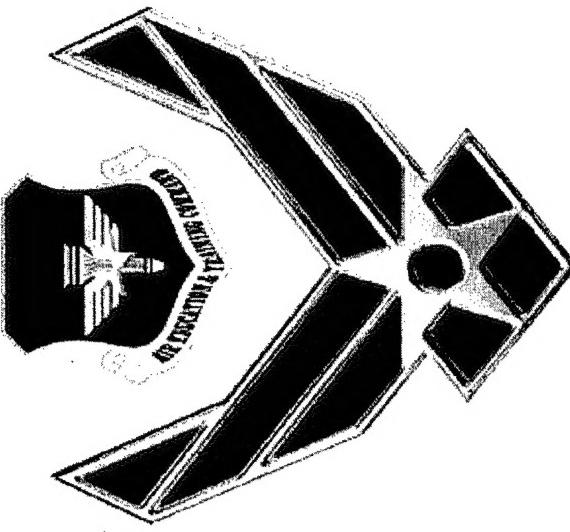


Air Education and Training Command

DISTRIBUTION STATEMENT A
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Distribution Unlimited

Occupational Survey Report AFSC 2E1X2

Meteorological And Navigation Systems



20031126 071

Christine G. Garcia
Oct 02

U.S. AIR FORCE

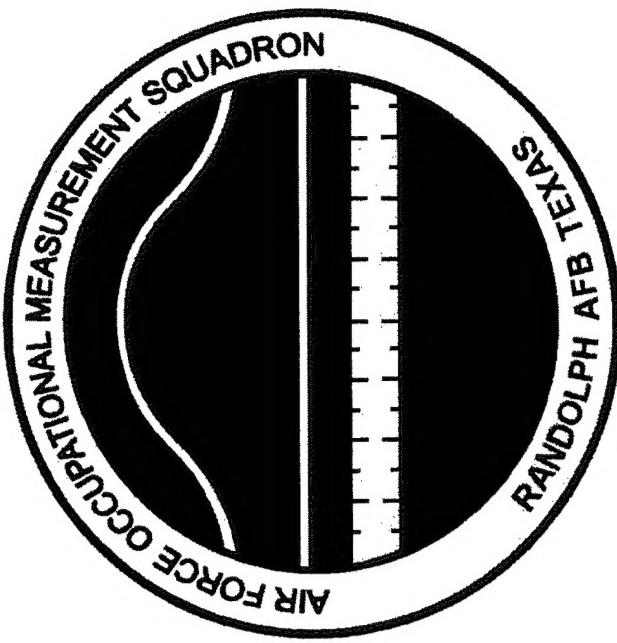
Integrity - Service - Excellence

Air Force Occupational Measurement SQ

AFOMS/OA

1550 Fifth Street East
Randolph AFB, TX 78150
DSN 487 - 6811

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Integrity - Service - Excellence

Overview

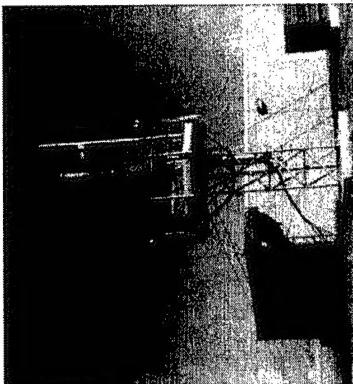
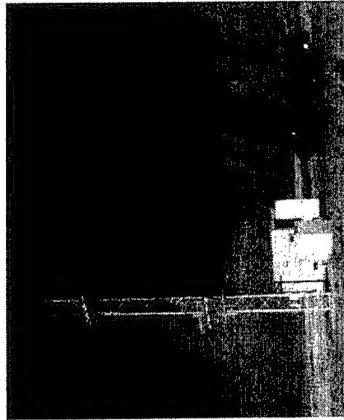
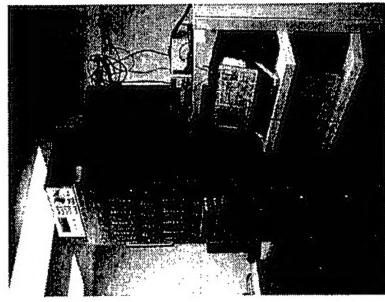
- Survey background
- Survey results
- Implications and way ahead





Work Performed by Members of AFSC 2E1X2

- Install, remove, relocate, modify, deploy and maintain fixed and mobile meteorological and navigation (METNAV) systems
- Perform flight inspection duties, analyze equipment performance trends



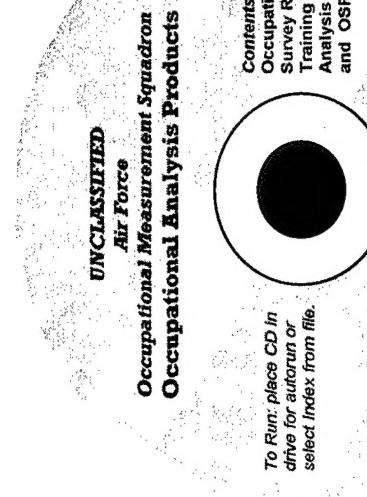
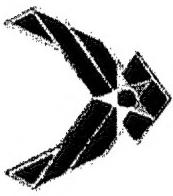
AN/FRN 45 Tactical Air Navigation (TACAN)

2E1X2

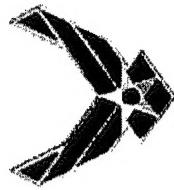
AN/GRN-29 Instrument Landing System (ILS)

Survey Background

- Survey initiated to obtain data to:
 - Evaluate current classification and training documents
 - Support promotion test development
- Last Occupational Survey Report (OSR) - August 1999
- Current survey data collected - February - July 2002
- Components Surveyed:
 - Active Duty: 3-, 5- and 7-Skill Levels
 - Guard: 5- and 7-Skill Levels



METNAV Systems
Sept 2002
(Approved for Public Release;
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Current Training Program



- AFSC-awarding course

- 338 TRS, Keesler AFB, MS
- E3ABR2E132-002, METNAV Apprentice Course, 90 Days
- 24 Semester hours for CCAF
- Prerequisite - Electronic Principles Course

Programmed TPR

FY02: 91 students

FY03: 100 students

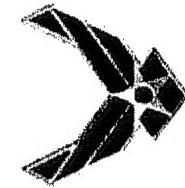
Programmed Elimination Rate

FY02: 10%

FY03: 10%



Survey Sample Characteristics



| | <u>AD</u> | <u>ANG</u> | <u>Total</u> |
|----------------|-----------|------------|--------------|
| Assigned* | 527 | 72 | 599 |
| Surveyed | 425 | 51 | 476 |
| Sample | 253 | 27 | 280 |
| Usable Returns | 60% | 53% | 59% |

- Average TICF for AD: 9 yrs 3 months
- Average TAFMS for AD: 10 yrs 3 months
- Percent of AD in first-enlistment: 26%

* Assigned as of July 02

2E1X2



Skill & Paygrade Characteristics



Skill-Level Distribution

| | Assigned* | Sample |
|-----------|-----------|--------|
| 3-Level - | 19% | 13% |
| 5-Level - | 47% | 55% |
| 7-Level - | 34% | 32% |

Paygrade Distribution

| | Assigned* | Sample |
|-------------|-----------|--------|
| E-1 - E-3 - | - | 13% |
| E-4 - | - | 20% |
| E-5 - | - | 27% |
| E-6 - | - | 22% |
| E-7 - | - | 16% |
| E-8 - | - | 1% |

*Assigned as of July 02

Note: Columns may not add to 100% due to rounding

2E1X2

Command Representation

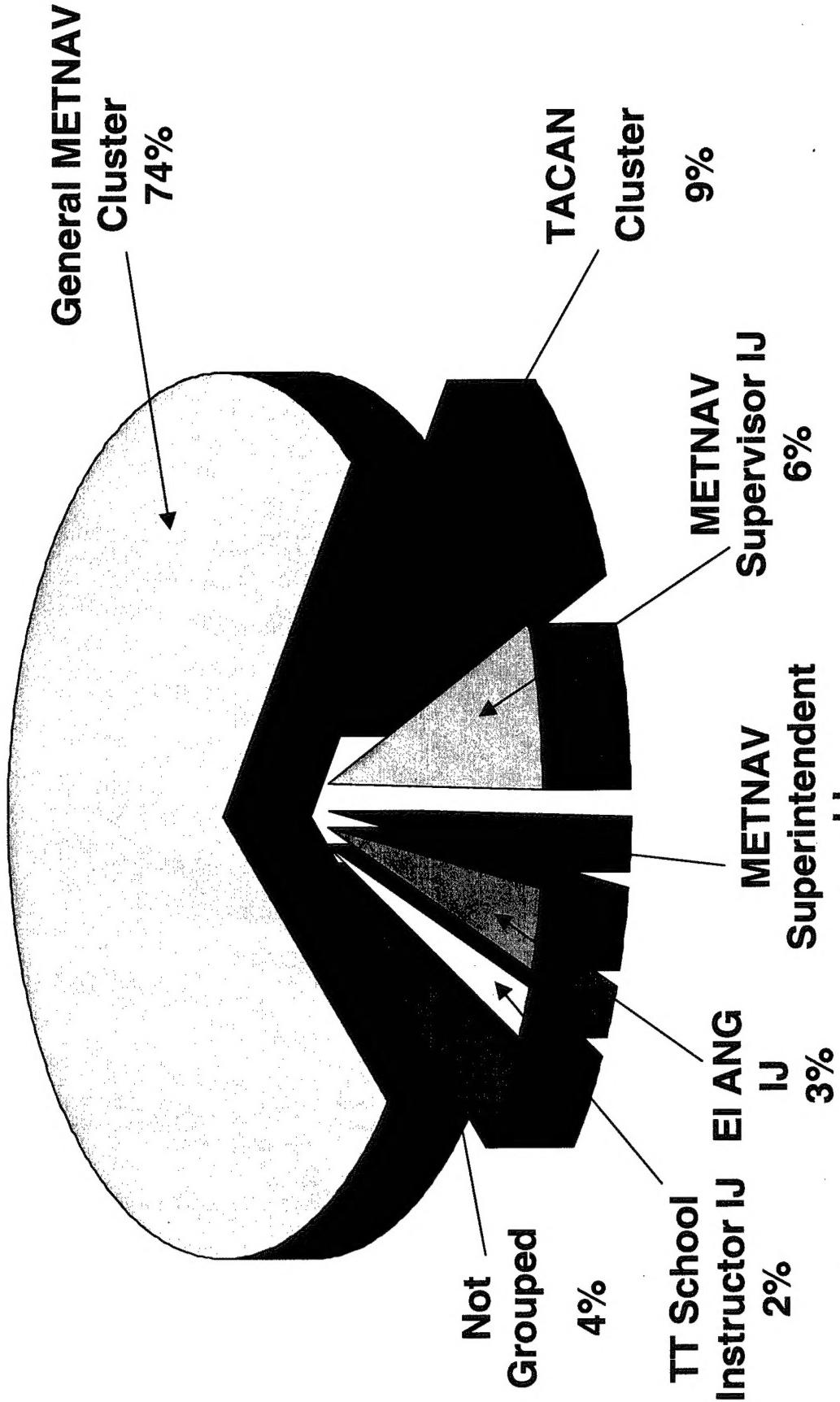


| Command | Assigned %* | Sample % |
|---------|-------------|----------|
| ACC | 20 | 19 |
| USAFE | 14 | 12 |
| AETC | 13 | 15 |
| AMC | 11 | 11 |
| PACAF | 11 | 9 |
| AFMC | 9 | 4 |
| AFSPC | 3 | 3 |
| AFSOC | 3 | 3 |
| AFFSA | 2 | 3 |
| AWS | 2 | 3 |
| ANG | 12 | 10 |

* Assigned as of July 02

Job Structure

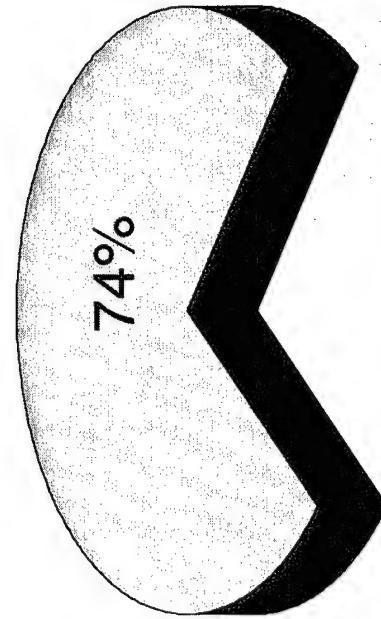
Sample size: 280



General METNAV Cluster (N=206)



- Remove or replace bulbs
- Trace circuits or signals using block or circuit diagrams
- Analyze system block diagrams
- Remove or replace dummy load
- Inspect, measure, or align GRN-30 localizer system units or major subassemblies



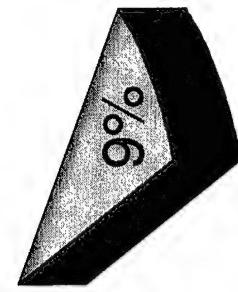
| |
|-------------------------|
| Entry-Level METNAV Job |
| General METNAV Job |
| Mobile METNAV NCOIC Job |



Tactical Air Navigation Cluster (N=24)

- Inventory equipment, tools, parts, or supplies
- Maintain tool kits
- Perform corrosion control procedures
- Pack or unpack tactical equipment
- Perform pallet buildups
- Adjust antenna orientations to known reference

| |
|--------------------------|
| Special Tactics Job |
| Combat Communication Job |



Independent Jobs

• METNAV Supervisor IJ (N=34)

- Evaluate personnel for compliance with performance standards
- Write replies to inspection reports
- Interpret policies, directives, or procedures for subordinates
- Counsel subordinates concerning personal matters

• METNAV Superintendent IJ (N=7)

- Initiate requests for TDY orders
- Monitor equipment certification programs
- Write staff studies, surveys, or routine reports, other than training or inspection reports



Independent Jobs

(Continued)



• Engineering and Installation (E) (ANG) IJ (N=7)

- Assemble conduits
- Assemble minor hardware, such as clamps, brackets or braces
- Install or remove FMQ-13 wind measuring sets
- Install or remove lightning protection
- Install or remove fixed TACAN systems

• Technical Training School Instructor IJ (N=6)

- Develop training programs, plans, or procedures
- Develop or procure training materials or aids
- Administer or score tests
- Develop written tests
- Conduct formal course classroom training

Career Ladder Progression



- 3- and 5-skill-level personnel
 - Work in the most technical jobs in the career field
 - Spend most of their time on technical tasks
- 7-skill-level personnel
 - Continue to perform technical tasks
 - However, take on supervisory, training, and administrative duties



Percent Across Specialty Jobs DAFSC



| | DAFSC | DAFSC | DAFSC |
|---|---------|--------|-------|
| 2E132 | 2E152 | 2E172 | |
| (N=36) | (N=153) | (N=91) | |
| | 83 | 80 | 59 |
| General METNAV Cluster | 14 | 7 | 9 |
| TACAN Cluster | | | |
| METNAV Supervisor IJ | 0 | 3 | 15 |
| EI (ANG) IJ | 0 | 3 | 2 |
| METNAV Superintendent IJ | 0 | 1 | 7 |
| Technical Training School Instructor IJ | 0 | 3 | 2 |
| Not Grouped | 3 | 3 | 6 |



Career Ladder Progression Percent Time Spent on Duties



| | DAFSC 2E132 (N=36) | DAFSC 2E152 (N=153) | DAFSC 2E172 (N=91) |
|---|--------------------------|---------------------------|--------------------------|
| Performing General Maintenance Activities | 36 | 29 | 20 |
| Maintaining Nonelectronic Meteorological Instruments and Solid-State Barometers | 5 | 4 | 1 |
| Maintaining Wind, Temperature, Visibility, Thunderstorm Sensing, and Cloud Sets | 10 | 7 | 3 |
| Maintaining NEXRAD PUPs | 1 | 1 | 1 |
| Maintaining Wind, Temperature, and Cloud | | | |
| Tactical Weather Equipment | 3 | 2 | 1 |
| Maintaining Solar Optical and Radio Observing Equipment | 0 | * | * |
| Installing or Removing METNAV Systems | 4 | 3 | 3 |
| Maintaining LFB Systems | * | * | * |
| Maintaining AN/GRN-29 SSILSS | 9 | 8 | 5 |

2E1X2 * Indicates less than 1%



Career Ladder Progression

Percent Time Spent on Duties (cont'd)

| | DAFSC 2E132 (N=36) | DAFSC 2E152 (N=153) | DAFSC 2E172 (N=91) |
|---|--------------------------|---------------------------|--------------------------|
| Maintaining VHF Omnidrange (VOR) Systems | 1 | 2 | 1 |
| Maintaining AN/TRN-2626B and AN/TRN-41 TACAN Systems and OE-537/URN Modulation Generators | 4 | 1 | 1 |
| Maintaining AN/FRN-45/46 TACAN Systems | 7 | 6 | 4 |
| Performing Flight Inspections | 1 | 2 | 3 |
| Performing Mobility Activities | 3 | 1 | 1 |
| Performing Management and Supervisory Activities | 4 | 13 | 30 |
| Performing Training Activities | 2 | 6 | 8 |
| Performing General Administrative and TO System Activities | 3 | 6 | 10 |
| Performing General Supply and Equipment Activities | 8 | 9 | 7 |



First-Enlistment Job Structure

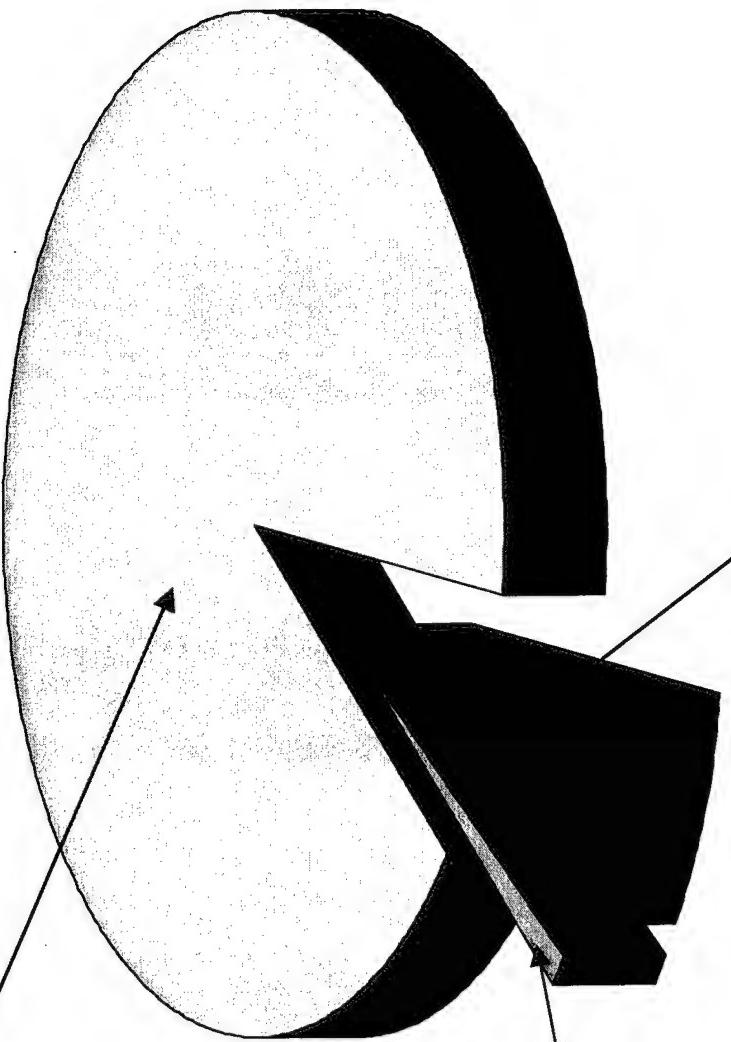


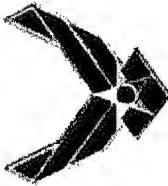
Sample size: 67

General METNAV Cluster
91%

Not Grouped
1%

TACAN Cluster
8%





First-Enlistment Personnel

Representative Tasks



Percent
Members
Performing

(N=67)

| Tasks | Percent Members Performing (N=67) |
|--|-----------------------------------|
| Remove or replace bulbs | 96 |
| Perform corrosion control procedures | 91 |
| Measure power outputs | 90 |
| Perform GMQ-34 cloud height set inspection and maintenance procedures | 90 |
| Perform FMQ-13 operational checks | 90 |
| Perform FMQ-13 operational checks wind measuring set inspection and maintenance procedures | 88 |
| Perform FMQ-8 temperature-dew point measuring set inspection and maintenance procedures | 88 |
| Trace circuits or signal using block or circuit diagrams | 88 |
| Perform FMQ-8 operational checks | 88 |
| Analyze system circuit operations | 88 |
| Inspect, measure, or align GRN-31 glideslope system units or major subassemblies | 88 |



First-Enlistment Personnel

Equipment



Percent
Members
Performing
(N=67)

Equipment

Test Equipment

Digital Multimeters
Oscilloscopes
Electronic Frequency Counters
Attenuators

Dummy Loads
Spectrum Analyzers
Directional Couplers

Weather/Navigation Equipment

AN/GMQ 34 Cloud Height Measuring Sets
AN/FMQ 13 Wind Measuring Sets
ML 17 Rain Gauges
AN/FMQ 8 Temperature Dew Point Measuring Sets
AN/GRN 29 ILs with Glideslope
ML 658/Gm Digital Altimeter Barometers
AN/FRN 45 Tactical Air Navigations
AN/GMQ 32 Transmissometer Sets
2E1X2

100
100
97
96
96
96
87

88
87
85
84
81
78
76
75

Training Documentation Analysis



- 2E132 Course Training Standard (CTS) was not matched to OSR data
 - CTS Electronic Principles/CTS Task List
 - CTS Task List not proficiency coded
- 2E152 and 2E172 Course Training Guides (CTGs) are well supported by OSR data
 - Twenty percent members performing used as a guide to CTG inclusion
 - CTG's line items are not proficiency coded
 - Tasks listed in Tasks Not Referenced (Training Extract) should be reviewed for possible inclusion in CTGs



Tasks not Referenced to CTGs



Examples

| Tasks | Percent Members Performing | 3- <u>LVL</u> | 5- <u>LVL</u> | 7- <u>LVL</u> | Tng Emp | Tsk Dif | ATI |
|--|----------------------------------|------------------|------------------|------------------|------------|------------|-----|
| A0052 Measure power outputs | 94 | 78 | 63 | 6.15 | 4.94 | 18 | |
| A0008 Analyze indications of BITs | 67 | 77 | 66 | 5.26 | 4.50 | 18 | |
| A0026 Compute voltage values | 58 | 38 | 36 | 4.26 | 4.30 | 18 | |
| J0251 Align FRN 44 antenna components | 14 | 30 | 23 | 4.37 | 7.06 | 11 | |
| C0110 Determine dewpoints using ML 429 psychrometric calculators | 50 | 49 | 37 | 4.04 | 4.44 | 18 | |

**Mean TE Rating is 2.25 Standard Deviation is 1.60 (HIGH TE= 3.85)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)**



Plan of Instruction (POI) Analysis

- POI is well-supported by survey data
- Tasks not referenced to any POI learning objective should be reviewed for possible inclusion in POI

Tasks not Referenced to POL



Examples

| <u>Tasks</u> | Percent Members Performing | 1st <u>Job</u> | 1st <u>Enl</u> | Tng <u>Emp</u> | Tsk <u>Dif</u> | ATI |
|---|----------------------------------|-------------------|-------------------|-------------------|-------------------|-----|
| A0010 Analyze system block diagrams | 88 | 87 | 7.04 | 5.31 | 18 | |
| I0238 Perform GRN 31 glideslope flight check ground procedures | 63 | 72 | 6.63 | 6.03 | 18 | |
| I0235 Perform GRN 30 localizer flight check ground procedures | 56 | 72 | 6.48 | 6.22 | 18 | |
| A0067 Record radiation pattern ground check readings | 63 | 73 | 6.37 | 4.35 | 18 | |

Mean TE Rating is 2.25, Standard Deviation is 1.60 (HIGH TE= 3.85)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)

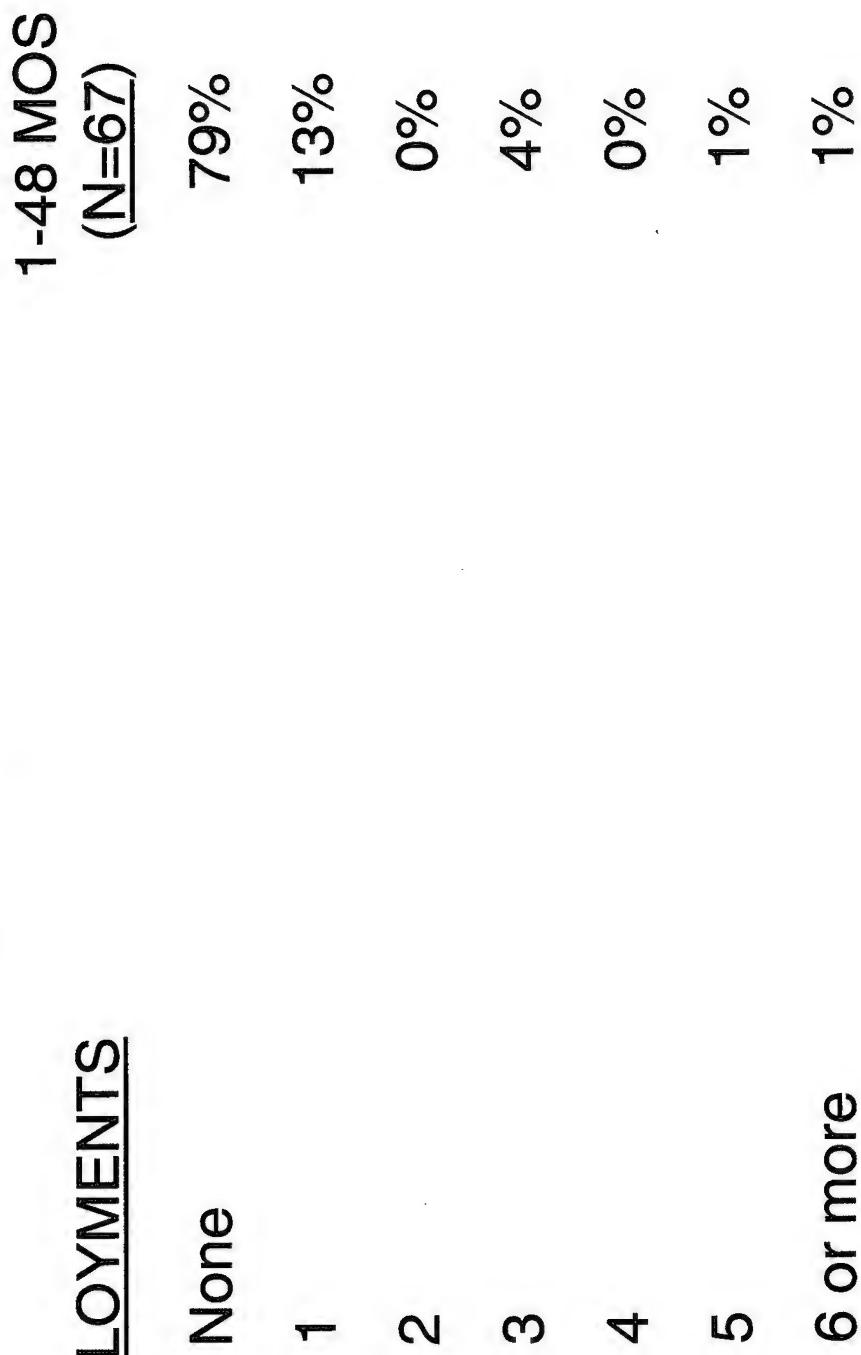


First-Enlistment Deployments



Number of deployments completed by
1-48 TAFMS personnel in support of contingencies or exercises
during the past 12 months

DEPLOYMENTS





Number of Days First-Enlistment Personnel Spent TDY



Deployment days spent by AD first-enlistment personnel on TDY in support of contingencies or exercises during the past 12 months

DEPLOYMENTS

| 1-48 MOS (N=67) | 9% |
|--------------------|-----|
| 30 days or less | 4% |
| 31-59 days | 3% |
| 60-89 days | 4% |
| 90-119 days | 0% |
| 120-149 days | 0% |
| 150-179 days | 0% |
| 180 days or more | 79% |
| None | 0% |

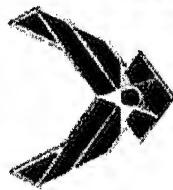
Columns may not add to 100% due to rounding



METNAV Courses Completed By AD 2E1 X2 Personnel



| <u>COURSES COMPLETED</u> | 1-48 MOS (N=67) | 49-96 MOS (N=51) | 97+ MOS (N=135) |
|--|--------------------|---------------------|--------------------|
| METNAV System Apprentice | 93% | 98% | 59% |
| VOR and TACAN Maintenance | 61% | 59% | 41% |
| Principles, Transmitters, and Monitors | 57% | 49% | 32% |
| AN/GMQ 34 Cloud Height Measuring Sets | 63% | 57% | 36% |
| AN/FMQ 13 Wind Measuring Sets | 63% | 57% | 31% |
| AN/FMQ 8 Temp Dew Point Measuring Sets | 63% | 57% | 36% |
| TACAN and TACAN Monitors | 64% | 55% | 40% |
| NEXRAD PUP Maintenance | 12% | 14% | 21% |
| None | 6% | 2% | 13% |
| Other | 10% | 20% | 24% |



Job Satisfaction Indicators

(AFSC 2E1X2 vs. Comparative Sample)



| | 1-48 Months 2002 Comp 2E1X2 (N=67) | 49-96 Months 2002 Comp 2E1X2 (N=51) | 97+ Months 2002 Comp 2E1X2 (N=133) (N=427) |
|-------------------------|--|---|---|
| Job interesting | 85 | 81 | 83 |
| Talents well utilized | 79 | 74 | 79 |
| Training well utilized | 84 | 77 | 91 |
| Sense of accomplishment | 76 | 71 | 79 |
| Plan to reenlist | 52 | 34 | 73 |
| | | | 94 |
| | | | 84 |
| | | | 86 |
| | | | 82 |
| | | | 75 |
| | | | 83 |
| | | | 80 |
| | | | 61 |
| | | | 55 |

*Comparative sample of 2EXXX AFSCs surveyed in the last 12 months includes AFSC 2E1X1 - Satellite, Wideband, and Telemetry Systems

2E1X2

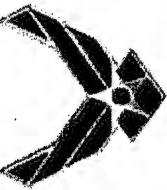


Job Satisfaction Indicators (AD)

(Current vs. Previous Study)



| | 1-48 Months TAFMS 2002 (N=67) | | 49-96 Months TAFMS 2002 (N=51) | | 97+ Months TAFMS 1999 (N=135) | | 97+ Months TAFMS 1999 (N=192) | |
|-------------------------|--|----|---|----|--|----|--|--|
| Job interesting | 85 | 90 | 83 | 83 | 94 | 93 | | |
| Talents well utilized | 79 | 81 | 79 | 80 | 86 | 93 | | |
| Training well utilized | 84 | 90 | 91 | 89 | 85 | 92 | | |
| Sense of accomplishment | 76 | 87 | 79 | 74 | 83 | 90 | | |
| Plan to reenlist | 52 | 48 | 73 | 41 | 61 | 65 | | |



Job Satisfaction Indicators (AD) (Across Specialty Jobs)



| | General METNAV Cluster (N=198) | TACAN Cluster (N=14) | METNAV Supervisor IJ (N=18) | METNAV Supt IJ (N=7) | TT School Instructor IJ (N=6) |
|-------------------------|--------------------------------|----------------------|-----------------------------|----------------------|-------------------------------|
| Job interesting | 91 | 71 | 78 | 100 | 100 |
| Talents well utilized | 83 | 43 | 83 | 86 | 83 |
| Training well utilized | 89 | 71 | 78 | 86 | 83 |
| Sense of accomplishment | 83 | 36 | 50 | 43 | 67 |
| Plan to reenlist | 63 | 64 | | | |



Retention Dimensions First-Enlistment Airmen (N=67)

| | Percent Responding | Average |
|---|--------------------|-------------|
| Planning to Reenlist (N=35) | | |
| Medical or dental care for AD member | 67 | 2.68 |
| Retirement benefits | 65 | 2.76 |
| Bonus or special Pay | 65 | 2.47 |
| Pay and allowances | 65 | 2.36 |
| Military related education and training opportunities | 65 | 2.19 |
| Planning to Separate (N=31) | | |
| Pay and allowances | 61 | 2.63 |
| Recognition of efforts | 61 | 2.16 |
| Location of present assignment | 58 | 2.50 |
| Military lifestyle | 55 | 2.41 |
| Civilian job opportunities | 48 | 2.67 |

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

Retention Dimensions Second-Enlistment Airmen (N=51)



Planning to Reenlist (N=37)

| | Percent Responding | Average |
|--|--------------------|-------------|
| Medical or dental care for family members | 65 | 2.46 |
| Job security | 63 | 2.69 |
| Bonus or special pay | 63 | 2.24 |
| Off-duty education or training opportunities | 54 | 2.60 |
| Pay and allowances | 54 | 2.40 |
| <hr/> | | |
| Planning to Separate (N=14) | | |
| Pay and allowances | 64 | 2.33 |
| Civilian job opportunities | 50 | 2.57 |
| Military lifestyle | 50 | 2.29 |
| Leadership at unit level | 43 | 2.50 |
| Bonus or special pay | 43 | 1.83 |

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Retention Dimensions Career Airmen (N=135)



Planning to Reenlist (N=82)

| | Percent Responding | Average |
|--|-----------------------|-------------|
| Retirement benefits | 77 | 2.73 |
| Medical or dental care for family members | 49 | 2.60 |
| Pay and allowances | 49 | 2.38 |
| Off-duty education or training opportunities | 49 | 2.33 |
| Military lifestyle | 49 | 2.28 |
| Planning to Separate (N=9) | | |
| Additional duties | 91 | 2.00 |
| Civilian job opportunities | 67 | 2.17 |
| Enlisted evaluation system | 56 | 2.60 |
| Military lifestyle | 56 | 2.40 |
| Bonus or special pay | 54 | 2.45 |

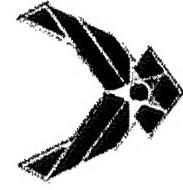
Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence

Summary of Results

- Career ladder progression typical
 - Highly technical at 3-skill level progressing to more managerial at 7-skill level
- Career ladder documents well supported by OSR data
 - CTGs and POI well supported by OSR data
 - Review of Tasks Not Referenced listing warranted for possible inclusion in CTGs or POI
- Job satisfaction indicators
 - Job satisfaction is good
 - Slightly lower than the previous study
 - Reenlistment intentions higher in the current study than the previous study

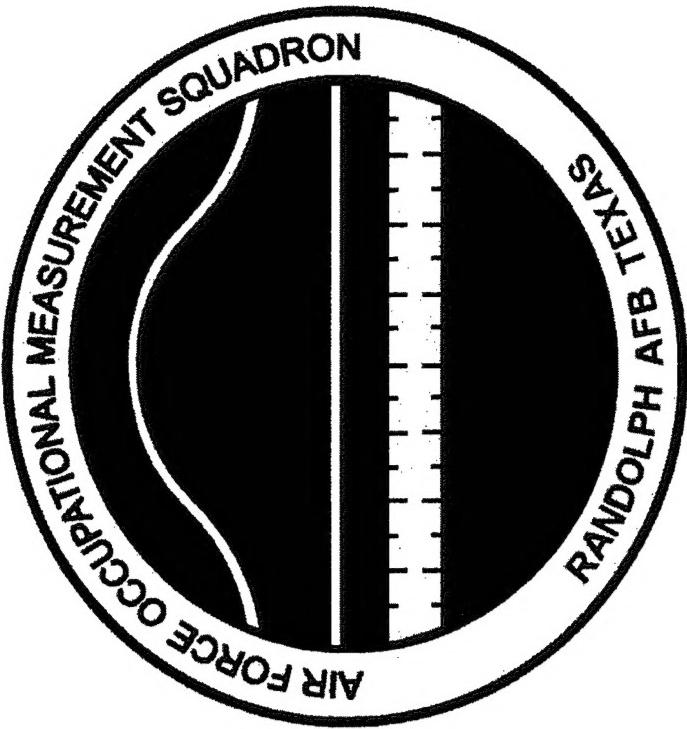


Way Ahead



- Utilization and Training Workshop (U&TW) is scheduled for 8 Oct 02 at Keesler AFB
- OSR results will be briefed at the U&TW
- SKT Team briefed with new data 18 Aug 02

Questions?



Visit our web site at:

<https://www-r.omsq.af.mil/OMY/indexomy.htm>

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